

LANDFILL GAS A Renewable Resource for Illinois

Illinois Landfill Gas Coalition

Presentation to the
Illinois Commerce Commission
Sustainable Energy Plan Initiative
Renewable Portfolio Standard
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ILLINOIS LANDFILL GAS COALITION

- Bio Energy (Illinois), LLC
- Bio Energy Partners
- Gas Recovery Services of Illinois, Inc.
- U.S. Energy Biogas Corp.
- Sexton Energy LLC
- WM Illinois Renewable Energy, LLC

LFG to Electricity Facility

Landfill Gas to Electricity

- What is Landfill Gas (“LFG”)?
- Benefits of using Landfill Gas to generate electricity
- Overview of Landfill Gas Utilization
- Landfill Gas to Electricity in Illinois
- The Details: Extraction and Use of LFG

What is Landfill Gas?

- Product of the anaerobic decomposition of waste in landfills
- 50 – 60 percent methane
- Remainder – carbon dioxide and trace components
- Heating value of 500-600 BTU/cubic foot

LFG to Electricity Facility Benefits of LFG to Electricity

- Uses a local resource that would otherwise be burned in a flare
- Less emissions than combination of flare and fossil fuel generation
- Highly reliable – 95% or higher availability
- Output not weather sensitive – available at summer peaks

Benefits of LFG to Electricity

- Short development time
- Minimal transmission upgrades
- Onsite fuel supply eliminates fuel transportation risk
- Every KWH of electricity generated by LFG displaces a KWH that would be generated by imported and domestic fossil fuels

Overview of LFG Utilization

- First Commercial Utilization of LFG
Palos Verde, California – 1975
- 1150 LFG Utilization Plants Worldwide
- 730 LFG Utilization Plants in Europe
- 355 LFG Utilization Plants in the U.S.
- 255 LFG to Electricity Plants in the U.S.

LFG to Electricity in Illinois

- Approximately 100 MW in operation
- 28 operating facilities
- Average capacity: 3-8 MW
- Incentive loan spurred development

Greene Valley Landfill DuPage County Potential LFG to Electricity in Illinois

- Approximately 400 MW installed by 2012
- 300 MW new development
- Development period of 12 – 18 months at a site
- Minimal transmission upgrades
- Assumes RPS does not limit LFG

Collection of LFG From the Landfill

- Wells are drilled into the landfill
(Horizontal and Vertical)
- Wells are connected by a system of pipes
- Landfill gas is collected to a central point

- Landfill gas is extracted from the landfill
- Unused Landfill Gas is burned in a flare

Landfill Gas Well Field Landfill Gas Collection Well Landfill Gas Wellhead LFG to Electricity

- LFG to electricity plant located at landfill
- Generator leases site from landfill owner
- LFG purchased by owner of generating plant
- Unused LFG routed to flare and burned

LFG to Electricity

- Reciprocating engine generator set produces electricity
- Larger plants may use turbines
- Typical LFG to electricity plant operates during more than 95% of the hours each year

Landfill Gas to Electricity Facility Questions?

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